# Request for No Further Remedial Action Planned

Site: Decommissioned Power Plant Annex, also known as Two Party Agreement (TPA) Site 9d and National Oceanic and Atmospheric Administration (NOAA) Site 19

**Location:** St. Paul Island, Alaska is approximately 800 miles southwest of Anchorage in the Bering Sea (Figure 1). On the island, the Decommissioned Power Plant Annex is situated in the northern portion of the City of St. Paul, between the base of Village Hill and the Trident Seafood Processing plant on Village Cove (57°07'26" N latitude, 170°16'59" W longitude).

Legal Property Description: The location of the former Decommissioned Power Plant Annex and the area of excavation is in the northern portion of Tract 46, Township 35 South, Range 132 West, of the Seward Meridian, Alaska, as shown on the dependent resurvey of a portion of U.S. Survey No. 4943, Alaska, Tract "A", St. Paul Townsite, officially filed June 3, 1997 (Figure 2). [Note: TPA site boundaries are not defined in the TPA. At its discretion, NOAA established a boundary for this TPA site based on site characterization data and historic information. Though this boundary extends beyond the Tract 46 boundary, corrective actions were only conducted within Tract 46.]

**Type of Release:** Potential release mechanisms include: 1) spills or leaks that occurred from aboveground storage tanks and drums; and 2) leaks associated with the fuel transfer pipelines.

# History and Background:

The Decommissioned Power Plant Annex consisted of a steel-framed and metal-sided building constructed sometime between 1973 and 1982, based on historical aerial photographs. The building was constructed atop a concrete slab and was used by the City of St. Paul for power plant operations until sometime in the 1990s. The northeast corner of the building housed a 5,400-gallon vertical diesel fuel storage tank used to supply fuel to a power plant adjacent to its southeast side.

The Decommissioned Power Plant Annex was subsequently used by the City of St. Paul Public Works Department as an unheated storage warehouse. It housed a variety of items, including abandoned batteries, pails, miscellaneous debris, and 55-gallon drums containing various fluids such as diesel fuel, glycol, lubrication oil, and used oil. In June 2000, NOAA initiated a cleanout of the building in preparation for demolition activities (Nortech Environmental, Inc. 2001). The building was demolished in July 2000, leaving only the concrete pad and foundation.

## **Summary of Site Investigations:**

In 1994, a soil sample collected by Woodward Clyde Consultants, Inc. (Woodward Clyde) from the south side of the Decommissioned Power Plant Annex revealed low concentrations of polynuclear aromatic hydrocarbons (PAH) (Woodward Clyde 1994). An expanded site investigation conducted by Hart Crowser, Inc. (Hart Crowser) in 1996 identified the presence of total petroleum hydrocarbons in soil at the Decommissioned Power Plant Annex (Hart Crowser 1997); however, no contaminants were detected above Alaska Department of Environmental Conservation (ADEC) cleanup levels.

NOAA contractors conducted quarterly groundwater monitoring from September 2000 to September 2001 and from October 2003 to July 2004 in the vicinity of the Decommissioned Power Plant Annex. During 2000-2001 sampling events, diesel range organic compounds (DRO) were detected above their Alaska Department of Environmental Conservation (ADEC) Table C cleanup level of 1,500 µg/l in upgradient well MW46-5 and downgradient well MW46-9, with maximum detected concentrations of 6,700 µg/l and 1,600 µg/l, respectively (IT Alaska Inc. 2002; Figure 3). Benzene was detected above its ADEC Table C cleanup level of 5 µg/l in well MW46-5, with a maximum detected concentration of 8 µg/l. During the first three quarters of 2003-2004 sampling, DRO were detected above their ADEC Table C cleanup level in well MW46-5 and a second upgradient well, MW46-30, with maximum detected concentrations of 7,200 µg/l and 6,500 µg/l, respectively (Figure 3). [Note, MW46-30 was installed in 2003 and thus not included in 2000-2001 monitoring.] Benzene was detected above its ADEC Table C cleanup level in well MW46-5, with a maximum detected concentration of 10 µg/l. A full report on 2003-2004 sampling events will be available late in 2004.

Mitretek Systems (2002) evaluated the 2000-2001 groundwater data for the St. Paul Village area, which includes the Decommissioned Power Plant Annex. The Mitretek report demonstrated that groundwater in the vicinity of St. Paul Village has high total dissolved solids and can be brackish. Consequently, the groundwater in the area is not suitable for drinking water. The evaluation, in part, provided a rationale for using alternative groundwater cleanup levels that are protective of human health and the environment where the groundwater is not potable. Mitretek concluded in accordance with 18 AAC 75.350 (ADEC 2000) that groundwater in the Village area is not currently used and does not afford any potential future use as a drinking water source. These findings provided the basis for the application of the Ten Times Rule discussed below.

# **Summary of Applied Cleanup Levels:**

NOAA employed ADEC Method Two cleanup criteria, discussed at 18 AAC 75.341(c) (ADEC 2000). Alternative cleanup levels were also applied for some compounds. For benzene, under the TPA, NOAA had the option to cleanup to the less stringent State of Alaska cleanup level in effect in 1991 (ADEC 1991). Additionally, NOAA proposed and ADEC approved the use of alternative cleanup levels under 18 AAC 75.345 and 18 AAC 75.350, commonly referred to as the Ten Times Rule (ADEC 2002, Mitretek Systems 2002). According to these regulations, if groundwater beneath a site contains contaminant concentrations above the cleanup levels provided in ADEC Table C, then the soil may be remediated to levels ten times higher than those provided in Method Two Tables B1 and B2 for the migration to groundwater pathway for those contaminants found in groundwater at concentrations above the cleanup levels provided in ADEC Table C; however, if the inhalation or ingestion pathway values are more stringent than the migration to groundwater pathway, then the more stringent value is to be applied. ADEC uses 15 feet below ground surface (bgs) to define subsurface soil to which residents will have a reasonable potential to be exposed through the inhalation or ingestion pathways (ADEC 2000; 18 Alaska Administrative Code 75.340 (j)(2)). Therefore NOAA is not obligated to excavate contaminated soil occurring at depths deeper than 15 feet to address the inhalation and ingestion pathways.

# **Summary of Cleanup Actions:**

Corrective action activities for the Decommissioned Power Plant Annex were initiated in conjunction with corrective action activities at the West Dock Fuel Transfer Facility (TPA Site 9p/Site 51) on June 24, 2003 and were largely completed on July 7, 2003 (NOAA 2003, Tetra Tech 2004a). Final completion of the corrective action occurred on October 9, 2003, with the disposal of contaminated soil that had originally been placed into drums during excavation activities due to concerns regarding the potential presence of polychlorinated biphenyls (PCB). Analytical data subsequently documented that PCBs were not present. Initial areas of excavation were selected based on suspected contamination identified during previous investigations, while the extent of excavation was determined based upon thin-layer chromatography (TLC) screening sample analyses or visual and olfactory observations. Excavation of contaminated soil was conducted to the extent practicable to a maximum depth of 15 feet bgs. If contaminant concentrations remained above ADEC Method Two cleanup levels based on TLC screening sample analyses, additional excavation was conducted even if the concentrations were below alternative cleanup levels unless further excavation was prevented by the presence of obstructions. The excavated PCS was stockpiled at the Tract 42 landfill site, pending final disposal at the National Weather Service land spreading site, or other ADEC approved disposal alternative.

On June 25, 2003, personnel initiated excavation activities at the Decommissioned Power Plant Annex near the base of Village Hill by uncovering and removing sections of the former diesel fuel and gasoline pipelines located between the Decommissioned Power Plant and Decommissioned Power Plant Annex. During the corrective action, four areas were excavated to investigate and remove known or suspected petroleum-contaminated soil (PCS) (Figure 4). Area 1 (approximately 70 feet long and 10 to 20 feet wide) was excavated adjacent to the southeast side of the Decommissioned Power Plant Annex. Area 2 (approximately 25 feet long and 8 feet wide) was excavated to the south of the first pit and the Decommissioned Power Plant Annex. Area 3 (approximately 35 feet long and 5 feet wide) was excavated further south of the Decommissioned Power Plant Annex and Area 2, and generally trended in a northwest to southeast direction. Area 4 consisted of a small pit (approximately 4 square feet) excavated near the northeast side of the Decommissioned Power Plant Annex to investigate a "hot spot" identified during previous sampling events.

Area 1 (Figure 4) was selected based on contamination identified during the 1994 investigation performed by Woodward Clyde (1994) and the need to remove the former diesel fuel and gasoline pipelines from this area. As personnel uncovered the former diesel fuel and gasoline pipelines, the lines were cut, drained, and staged for disposal. Approximately 10 gallons of diesel fuel and 7 gallons of gasoline were recovered during the corrective action. In areas where it was not feasible to remove the pipelines because of other buried utilities, the road, and the Decommissioned Power Plant Annex concrete pad, the pipe ends were filled with cement after they had been drained. Based on TLC screening sample analyses and visual observations, Area 1 was expanded to the northeast and southwest; depths of excavation varied from 5 feet bgs in the southwest portion to 15 feet bgs in the northeast portion. In addition to the former diesel fuel and gasoline pipelines, numerous unknown utility lines were discovered throughout Area 1, including a 12-inch diameter pipe east of the Decommissioned Power Plant Annex that was leaking an unknown material. Personnel removed sections of the pipe, recovered as much of the

unknown material as possible into drums, and excavated contaminated soil from the vicinity. The 12-inch pipe was later determined to be a broken drain line leading from the Decommissioned Power Plant Annex concrete pad and was likely once used as a saltwater discharge line. Laboratory analytical data for the unknown material indicated DRO concentrations up to 2,100,000  $\mu$ g/L; PCBs were not detected. The unknown material was containerized in drums and subsequently deposited on the Tract 42 PCS stockpile. A 3-inch-diameter, polyvinyl chloride (PVC) pipe was also discovered at the northeast end of Area 1 near the access road. Upon verifying with local officials that the 3-inch PVC pipe was not an active utility, personnel cut and removed the pipe; approximately 15 gallons of machine oil were recovered.

Areas 2 and 3 (Figure 4) were selected in an effort to intercept the former diesel fuel and gasoline pipelines further to the south while avoiding existing utility lines that had been marked by local officials. Excavation in these areas was conducted to further investigate conflicting information obtained from local residents regarding the presence of the pipelines; it was uncertain whether the pipelines had been removed previously. These areas were chosen based on the most likely route of the pipelines identified by local residents. Each area was excavated to a maximum depth of approximately 8 feet bgs, and the pipelines were not unearthed, presumptively verifying that the pipelines had been removed previously during construction activities at the base of Village Hill. Upon investigation, no contamination was identified based on TLC analysis or visual and olfactory observations; therefore, no confirmation samples were deemed necessary. Both areas were backfilled using existing soil.

Hart Crowser identified a hot spot in 1996 (Hart Crowser 1997) that was investigated in Area 4 (Figure 4). This area was excavated to a depth of approximately 4 feet bgs. No contamination was identified based on TLC analysis or visual and olfactory observations. One confirmation sample was collected from Area 4 for laboratory analyses, and the excavation was backfilled.

Eleven confirmation samples were collected from Area 1 and one was collected from Area 4 for laboratory analyses including benzene, toluene, ethylbenzene, and total xylenes (BTEX), GRO, DRO, residual-range organic compounds (RRO), select PAHs, and lead. Confirmation samples collected from the bottom of Area 1 indicated DRO concentrations that varied from not detected to 10,000 mg/kg; six of the twelve samples collected from this area exceeded the ADEC Method Two cleanup level of 250 mg/kg, and three of the twelve samples were at or above the alternative cleanup level of 2,500 mg/kg (Table 1, Figure 5). The confirmation sample collected from the bottom of Area 4 had a DRO concentration of 470 mg/kg, exceeding the ADEC Method Two cleanup level, but below the alternative cleanup level (Table 1, Figure 5).

GRO concentrations in confirmation samples collected from the bottom of Area 1 varied from not detected to 310 mg/kg; one of the twelve samples collected from this area exceeded the ADEC Method Two cleanup level of 300 mg/kg, but none of the samples exceeded the alternative cleanup level of 1,400 mg/kg (Table 1, Figure 5).

Benzene concentrations in confirmation samples collected from the bottom of Area 1 varied from not detected to 0.11 mg/kg; two of the twelve samples collected from this area exceeded the

ADEC Method Two cleanup level of 0.02 mg/kg, but none of the samples exceeded the alternative cleanup level of 0.5 mg/kg (Table 1).

Concentrations of all other contaminants in confirmation samples from Areas 1 and 4 were below the ADEC Method Two cleanup levels. Laboratory reporting limits were below ADEC Method Two cleanup levels for all analyses except benzene. For benzene, reporting limits varied from 0.02 mg/kg to 0.16 mg/kg, which is above the ADEC Method Two cleanup level of 0.02 mg/kg but below the alternative cleanup level of 0.5 mg/kg.

Additionally, one waste sample was collected for laboratory analyses from the liquid contents of the septic tank at the northeast corner of the Decommissioned Power Plant (Figure 4). Results indicated a DRO concentration of 1,000  $\mu$ g/L. Concentrations of PCB congeners were below detection limits. The septic tank and its contents were left in place.

The two confirmation samples exceeding the alternative cleanup level for DRO (SP19-CS-028-150 and SP19-CS-034-150) were collected from the bottom (15 feet bgs) of Area 1. Although no further excavation could be conducted in this area because of equipment limitations (*i.e.*, excavator reach from accessible areas), as discussed above, the excavation depth of 15 feet is sufficient to mitigate inhalation and ingestion pathways.

Each excavation was backfilled after TLC screening sample analyses indicated contaminant concentrations below ADEC Method Two cleanup levels and fixed laboratory confirmation samples had been collected. If remaining contamination was suspected but further excavation was prevented by the presence of obstructions such as structures, rock, boulders, and utility lines, backfill was also placed after fixed laboratory confirmation samples had been collected. Backfill operations involved transporting clean fill material from the portion of the Telegraph Hill quarry owned by Tanadgusix Corporation (TDX) to the site (Tetra Tech 2004b), dumping the material into the excavation, and compacting the fill material with the excavator bucket or by trackwalking the excavator over the area. Each area of excavation was restored to its original grade. Backfilling and site restoration activities were completed on July 7, 2003.

During the corrective action, a total of approximately 300 cubic yards of PCS were removed from the four areas around the Decommissioned Power Plant Annex. No stockpile samples were collected from the removed PCS; however, stockpile samples collected from other corrective action sites during 2003 are believed to be generally representative of all corrective action sites (Tetra Tech 2004c). Metal pipelines removed from the excavations were cut into manageable sections and shipped on January 4, 2004 to Seattle Iron and Metal, Corp. for recycling.

## **Recommended Action:**

In accordance with paragraph 59 of the Two Party Agreement (NOAA 1996), NOAA requests written confirmation that NOAA completed all appropriate corrective action at the Decommissioned Power Plant Annex, TPA Site 9d/Site 19 in accordance with the Agreement and that ADEC requires no further remedial action plan from NOAA.

## References:

Alaska Department of Environmental Conservation (ADEC). 1991. Interim Guidance for Non-UST Contaminated Soil Cleanup Levels, Contaminated Sites Program. July 17, 1991.

ADEC. 2000. Title 18 of the *Alaska Administrative Code* 75, Articles 3 and 9. *Oil and Hazardous Substances Pollution Control Regulations*. State of Alaska. Amended through October 28, 2000.

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Hart Crowser, Inc. 1997. Expanded Site Inspection of St. Paul Island, Pribilof Islands, Alaska. January.

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NOAA. 2003. Final Draft Corrective Action Plan for the Removal of the West Dock Fuel Transfer Facility (Site 9P) and the Decommissioned Power Plant Annex (Site 9D), St. Paul Island, Alaska. May 21.

Nortech Environmental, Inc. 2001. Decommissioned Power Plant Annex Demolition Report. July 13, 2001.

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Tetra Tech. 2004b. Letter Report, Summary of 2003 Field Season Backfill Activities, St. Paul Island, Alaska. July 23.

Tetra Tech. 2004c. Letter Report, Summary of 2003 Field Season Stockpile Activities, St. Paul Island, Alaska. July 23.

Woodward-Clyde Consultants, Inc. 1994. Site Inspection Report, St. Paul Island, Alaska. Contract No. DACA67-92-D-1017. Delivery Order No. 36. November.

For the National Oceanic and Atmospheric Administration

John Windsay

NOAA, Pribilof Project Office

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**Approvals:** In accordance with Paragraph 59 of the Two Party Agreement, this is to confirm that all corrective action has been completed at the Decommissioned Power Plant Annex, TPA Site 9d/Site 19 in accordance with the Agreement and that no plan for further remedial action is required.

For the Alaska Department of Environmental Conservation

Louis Howard

Alaska Department of Environmental Conservation

Remedial Project Manager

Date

**Tables and Figures** 

Table 1. Analytical Data Summary for Confirmation Samples from the Decommissioned Power Plant Annex, TPA Site 9d/Site 19, St. Paul Island, Alaska

Sample Number	Sample Depth (feet bgs)	Benzer (mg/kg		Tolue		Ethyl benzer (mg/kg	ie	Total Xy (mg/k		GRO (mg/kg		DRC (mg/k		RRC (mg/k		Lead (mg/kg)
Site 19/TPA Site 9d Co	onfirmation Sampl	es														
SP19-CS-003-050	5	0.02	U	0.02	U	0.02	U	0.02	U	1	U	10	U	50	U	2.60
SP19-CS-006-050	5	0.02	U	0.02	U	0.02	U	0.02	U	1	U	10	U	50	U	2.50
SP19-CS-008-050	5	0.02	U	0.02	U	0.02	U	0.03		1		110		930		1.60
SP19-CS-009-050	5	0.02	U	0.02	U	0.02	U	0.02	U	1	U	10	U	50	U	6.10
SP19-CS-925-040	4	0.02	U	0.02	U	0.02	U	0.03		5		470		450		3.85
SP19-CS-027-150	15	0.02	U	0.02	U	0.02	U	0.02	U	13		140		50	U	2.50
SP19-CS-028-150	15	0.02	U	0.02		0.02	U	0.65		88		10,000		4,400		2.46
SP19-CS-033-150	15	0.16	U	0.16	U	0.16	U	0.47		23		2,500		1,000		8.05
SP19-CS-034-150	15	0.02	U	0.05		0.02	U	0.82		97		9,600		2,400		2.49
SP19-CS-035-150	15	0.02	U	0.02	U	0.02	U	0.08		18		690		490		2.54
SP19-CS-036-150	15	0.11		0.30		0.89		5.00		310		1,500		650		2.76
SP19-CS-037-150	15	0.03		0.11		0.22		0.79		63		1,800		1,300		3.35
Trip Blank Samples																
Trip blank		0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ	1	UJ					
Trip Blank		0.02	U	0.02	U	0.02	U	0.02	U	1	U					
Trip blank		0.02	U	0.02	U	0.02	U	0.02	U	1	U					
Trip blank		0.02	U	0.02	U	0.02	U	0.02	U	1	U					
Method Two Cleanup Level <sup>a</sup> 0.02			5.4		5.5		78		300		250		10,000		400 <sup>e</sup>	
Alternative Cleanup Level <sup>b</sup> 0.5 <sup>c</sup>			54		NA		NA		1,400 d		2,500		NA		NA	

N	0	٠	0	C	
14	U	ι	C	0	

bold	Indicates concentration above one or both cleanup levels. Although reporting limits for benzene sometimes exceeded the ADEC Method Two cleanup level of
	0.02 mg/kg, all reporting limits were below the alternative cleanup level of 0.5 mg/kg.

ADEC Alaska Department of Environmental Conservation

bgs Below ground surface

BTEX Benzene, toluene, ethylbenzene, and total xylenes

DPPA Decommissioned Power Plant Annex
DRO Diesel-range organic compounds
GRO Gasoline-range organic compounds

mg/kg Milligrams per kilogram

-- Not analyzed NA Not available

PAH Polynuclear aromatic hydrocarbon RRO Residual-range organic compounds

TPA Two-Party Agreement

U The analyte was analyzed for, but not detected above the sample reporting limit

UJ The analyte was analyzed for, but not detected. The associated numerical value is the estimated sample reporting limit

a Cleanup level is from Title 18 of the Alaska Administrative Code 75, "Oil and Hazardous Substances Pollution Control Regulations," published by the State of Alaska and amended through October 28, 2000. Contaminants of concern for this site are limited to BTEX, GRO, DRO, RRO, select PAHs, and lead.

b Cleanup level obtained from ADEC Method Two based on the "Ten Times Rule" applied to the migration to groundwater pathway, as discussed in Section 5.0 of the corrective action plan (National Oceanic and Atmospheric Administration [NOAA] 2003).

c Under the TPA, NOAA is required to comply with the 1991 ADEC cleanup level for benzene (0.5 mg/kg).

d Cleanup level selected is based on more stringent value associated with ingestion and inhalation pathways.

e Although these sites are in an industrial area, NOAA is using the residential cleanup level for lead (400/mg/kg).

Request for NFRAP
Decommissioned Power Plant Annex, TPA Site 9d/Site 19
St. Paul Island, Alaska









